

# LED ILLUMINATED PARTICLE DETECTION APPARATUS AND METHODS

## ABSTRACT OF THE DISCLOSURE

An LED illumination source device for use in a flow particle detector such as a flow cytometer includes an LED for providing light at a selected wavelength, an optical element having a small focal length for collecting nearly all of the light from the LED and substantially collimating it to a beam of light, and a focussing optical element for focussing the collimated beam at a selected volume within a flow sample stream. The LED may be composite LED which generates light at two wavelengths.